ABSTRACT

The development of the Software-Defined Network (SDN) continues to provide innovations for all needs of specific fields. A military communication network is a test for this breakthrough because all systems are dominated by computers that integrate with three types of communication devices: wireless, wired, and satellite. Military SDN application branches are grouped based on layer function used and military-type service needs, which one of them is resource sharing. Resource sharing services require Mininet and controllers such as Ryu to create a network link for testing SDN military applications.

This final project analyzes resource sharing performance in the form of sending video streaming at the Military Resort Command (Korem) 062/Tarumanegara. The test was used Ubuntu 18.04 OS. This topology adds several switches to find out is it affect to Quality of Service (QoS) parameter. The reason using ryu as controller is there are several python programming, one of them is Spanning Tree Protocol. It can configure port switch automatic and handling traffic loop. The scenario was tested on link down and no link down.

The result for delivery of streaming video to each Military District Command (Kodim) to Korem is successful with a python script-based custom topology. From all parameter are categorized very good and average based on TIPHON standardization. But for packet loss is 16% if link down happened. The conclusion obtained for QoS is the topology with 4 switches are recommended for Korem 062/Tarumanegara.

Keyword: Software-Defined Network (SDN), resource sharing, video streaming, Military Resort Command 062/Tarumanegara (Korem), ryu, Quality of Service (QoS).